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A CASE OF PEMPHIGUS OF THE CONJUNCTIVA WITH REMARKS.[1]

BY ROBERT TILLEY, M.D., CHICAGO, ILL.

The case which I present to you for inspection is happily not a common one.

You see before you a boy, C. T., of 12 years absolutely blind. He can simply distinguish night from day, and as he is certainly beyond operative relief he may with scientific accuracy be termed blind. He is blind, however, not from any disorder of the optic nerve, not from any central lesion, not from any affection of the uveal tract, nor from any primary affection of the lens or cornea, not from any traumatism, but from a complete closure of both upper and lower conjunctival cul-de-sacs and a complete adhesion of both lids to the eyeballs, the adhesion having taken place with the lids nearly wide open.

He was in practically the same condition in the early part of the year 1882, when I first saw him as he is now, only

[1]Read before the Ophthalmological Section of the American Medical Association, Chicago, 1887.

at that time there was a large amount of photophobia and a certain amount of acute swelling in the border of the lids; also there was a good deal more evidence of the existence of corneal tissue than now. There was at that time practically no difference in the two eyes; the left had slightly the most unpromising appearance.

I say he was practically in the same condition, I mean, of course, relative to his eyes.

There were at that time numerous bullæ over the body and one in the buccal cavity on the left side of the cheek, and an angry vaccination pustule about an inch in diameter on the left arm. These bullæ continued to appear at intervals over the body for about four years. There has not been any appearance of them according to the statement of the mother for the past year; all traces of them have disappeared except two almost symmetrically located on the two sides of the chest, where suppuration evidently occurred; these you can inspect for yourselves.

The history obtained from the parents is that all the children were vaccinated at the same time, but that the vaccine point which was about to be used for the patient was dropped, seized by a dog and still used. That after the vaccination fever occurred and from that time his eyes became inflamed so that in a brief period "they were as red as raw beef." The vaccination occurred in February, 1881, and the mother is confident that the boy has not been able to see since the month of April, 1881. Previous to the vaccination the mother is confident that there had been no affection of the boy's eyes whatever.

I mention this history particularly because of its relation to a quotation by McCall Anderson from Sir Erasmus Wilson which I shall make later.

It was to relieve this severe redness of the eyes and closure of the lids that the child was taken to an eminent oculist of this city about the month of April, 1881.

I am unable to describe the condition of the eyes at this time, but I learn that the attendance was limited to about three or four visits.

The interesting feature of this case is the evidence of healthy eyes prior to February, 1881; the appearance of redness and swelling and, according to the mother, inability to see since April, 1881, and my own personal observation of this hopelessly blind condition in the month of January, 1882, all certainly within a year and in all probability the whole difficulty occurred in two months. Further the presence of bullæ on the body developed after the destructive closure of the lids; their appearance in successive crops for a period of four years; the disappearance of all traces of these bullæ except two which ulcerated on the chest; and I think I may add the absence of any evidence of any inherited constitutional trouble. I will add here that none of the other children were affected in any similar way.

Are we then justified from these facts together with the present condition of the eyes, which you can inspect for yourselves, and which will be described more minutely later, in concluding that during the period of severe redness and inflammation the bullæ of pemphigus invaded so extensively the conjunctiva as to destroy its texture completely, and cause this complete adhesion of the lids to the eyeballs? In other words that this is a genuine case of that rare affection, pemphigus of the conjunctiva of an unusually severe type.

You will observe that the time of development of the disease to such a disastrous result was very short and that there is no evidence of any previous trachoma.

This I consider strong evidence of some destructive agency, and in the absence of any traumatism of any kind would be best explained by supposing the existence of blebs with possibly slight suppuration destroying the thin and delicate conjunctiva.

As you inspect him you will observe that the corneæ of both eyes, if any corneæ may be said to exist, are dry and horny; that they are never moistened by tears or mucus of any kind. You will see that the lashes are not much inverted; that the lids are completely adherent to the globes throughout their whole extent, and yet that the adhesion is so loose that it is evident that the pathological process has not invaded the deep

tissues of the lids. You will see that the puncta lachrymalia are obliterated or at any rate not visible; that the palpebral fissure is of nearly normal length; that the distance between the lids in the centre is not far from normal; but that from the borders of the lids there extends over the eyeball a dry horny pellicle, and that in the centre of the external surface of each eyeball is a small dry residue of a former tissue. I have seen no evidence of the secretion of tears.

I think you will fail to find any evidence from the contour of the face or teeth of inherited trouble; the teeth, however, are markedly irregular, but they cannot be referred to the classical teeth of Hutchinson. When I saw him in 1882 this peculiarity of the teeth had of course not appeared, he was then about six or seven years. As you look at the teeth it would appear that the upper two central incisors are separated by a tooth of another kind.

There is one thing that I must not fail to mention, that is that the mother has been and still is subject to a contracted condition of the conjunctiva of the upper lids resulting in inverted cilia. That is the only fact that seems to be of interest relative to the family history. There are in all six children with only one death.

Early in the year 1882 I tried assisted by Dr. Gradle and Dr. Niles, the family physician, to separate the lids from the ball of the left eye, but the result coincided with the experience of others—it was a failure. There were no operative measures taken with the other eye.

Assuming that we are justified in calling this the result of a case of pemphigus, then it must be quite a unique case. According to Pflüger, as quoted by W. Lang in the transactions of the Ophthal. Society of the United Kingdom, 1886, Hebra had seen up to the year 1873, two hundred cases of pemphigus but in no case did it affect the conjunctiva. Of course it may be said that patients so afflicted would be more likely to visit the ophthalmologist than the dermatologist, but the cases are also exceedingly rare in ophthalmological literature.

The subject has on two occasions been brought before the

Ophthalmological Society of the United Kingdom, and in its transactions for 1886; Mr. W. Lang reviews the literature of the subject, and says that up to that time only twenty-three cases had been published. The first was published by Mr. White Cooper in the L. O. H. Reports, July, 1858 and that only one of these was published in America.[1]

In the *Traité Complet d'Ophthalmologie* by De Wecker and Landolt, p. 438, we read: Pemphigus, even when universal, only rarely affects the conjunctiva.

Prof. Von Arlt, of Vienna, in his diseases of the anterior part of the eyeball as translated by Dr. Lyman Ware, says: "Conjunctival pemphigus is an exceedingly rare disease. The author has seen but two cases, and they had run their course." If a veteran of Von Arlt's experience had only seen two cases there needs no other evidence of its rarity.

Mr. W. Lang in his report above referred to presents three cases two of which had already been presented to the society under the title of "A Peculiar Affection of the Conjunctiva," Mr. Lang strove to show that the cases published under the head of "Essential Shrinking of the Conjunctiva" by Von Graefe and the syndesmitis degenerativa of Stellwag properly belong to the same affection and should be classified as pemphigus of the conjunctiva. The subject, however, elicited much discussion and a difference of opinion.

In referring to the dermatologists we find in Besnier's translation of Kaposi, p. 57: In pemphigus bullæ have also been observed in the conjunctiva. Pemphigus when it attacks the mucous membrane is sometimes confined to that membrane or precedes the lesion on the skin. According to McCall Anderson it seems to be occasionally called into activity as the result of injuries, he says Sir Erasmus Wilson has recorded two cases of this kind. (McCall Anderson, 1887, p. 255).

A servant girl poisoned her hand with a red paste with which she was cleaning brass. A few days afterward a crop of

[1] I have since learned that one case was reported to the Ophthal. Sec. of American Med. Asso. in 1886 by Dr. Dickinson, of St. Louis.

bullæ intermingled with ecchymosed spots came out over the wrists and forearm, and continued to trouble her for seven years.

The other case was one of a medical man who punctured his right hand; three or four weeks afterwards an eruption of bullæ made its appearance on his right thigh and was repeated from time to time for eighteen months. The outbreak was preceded by feverish symptoms, there was a scalding sensation in the skin and the next morning a fully developed bulla would be discovered.

I will not attempt to refer this case to its appropriate section as pemphigus vulgaris or pemphigus foliaceus. I will leave that for dermatologists.

The special characteristics of bullæ on the conjunctiva, if there are any special characteristics must also be left for those who have the privilege to observe them. I can find practically no direct statement of a well observed case. All the writers on the subject coincide that such blebs on the mucous surfaces are very fugitive and from the delicate nature of the mucous membrane of the conjunctiva and the constant friction of the parts their character would be still more fugitive on the conjunctiva.

I certainly saw one on the inside of the left cheek, it was about three-quarters of an inch long and five-eighths wide. It was moderately distended, the edges terminated abruptly, there was no manifest inflammation around the edges, and it did not seem to give any serious inconvenience. The contents were turbid as seen through the walls of the bleb.

I have no evidence to offer as to the definite histological changes which occur in such cases. I can find none.[1]

[1]Since writing the above I have seen two articles on the subject in *Zehender's Klin. Monatsbl.*, 1885. Dr. Th. Gelpke in describing the microscopical appearance of conjunctival and associated tissues altered by pemphigus, says: There was no trace of any normal conjunctiva; the tarsal glands could only be seen at the lid borders.

Dr. E. Baümler in the same journal, describing the microscopical appearance of an abscised cornea which had suffered from pemphigus, says: The cornea varied in thickness. The corneal epithelium proper was absent and so was Bowman's mem-

The question of diagnosis in its early stage from the evidence at our disposal must be difficult.

Mr. W. Lang in speaking of the one undisputed case that he presented to the Ophthalmological Society of the United Kingdom confesses that he had not recognized it until Baümler directed his attention to it.

Landolt in reporting a case says it passed through the hands of Sichel, sen., and Liebreich unrecognized, and adds that having had the opportunity of seeing the patient for several months he was convinced that the case was one of pemphigus. Von Arlt says that one of the cases he refers to had been regarded as an obstinate manifestation of syphilis until it was recognized by a dermatologist.

In the Ophthal. Society of the United Kingdom, Trans. 1886, p. 128, W. Lang, in speaking of Steffan's case, "Only once was a vesicle seen on the conjunctiva and this occurred on the skin-like shrunken lower conjunctival sac." Under these circumstances the diagnosis must be conceded to be difficult. I have no suggestions to make.

As to treatment little or no definite information can be offered, at any rate, such as is based on previous experience. I should say that any measure with the use of which the surgeon is most familiar for the relief of an inflammatory condition of the mucous membrane diluted so as to conform to the super-sensitiveness of the eye would be considered an appropriate treatment, taking as a criterion of applicability that the treatment should leave the patient more comfortable and that independent of any narcotic influence.

Of course if it were possible to anticipate any such disaster as this, any surgical measures having in view the absolute prevention of friction of the lids with the eyeballs during the acute stage would be justifiable.

I have said that my efforts to detach the lids after they

brane. The corneal tissue and Descemet's membrane were present. The cornea was covered with a membrane resembling somewhat conjunctiva but the epithelium corresponding rather to the epithelium of the skin. In all probability these tissue changes vary with different periods of the affection.

completely adhered to the eyeballs were fruitless; and I quote from Messrs. Lang and Jules to show that their experience was the same. Mr. W. Lang says, *loc. cit.*, "unfortunately like some cases of pemphigus"—he was speaking of cases otherwise classified—"it is not amenable to treatment, although every means, both medical and surgical, has been tried, such as transplanting conjunctiva and other mucous membranes into the shrunken conjunctival sacs." M. Jules says in reference to one case: The house surgeon attempted to separate the lids from the globe by incision and performed the operation of peritomy. The operative interference was most pernicious.

I have seen some of the transplantations of mucous membranes for kindred cases at different stages in its history and although they appear well at first, a few months are sufficient to destroy all enthusiasm associated with the hoped for success. Of course this remark does not apply to transplantations for other affections.

THE REVOLUTION IN THE AFTER TREATMENT OF CATARACT OPERATIONS.

BY JULIAN J. CHISOLM, M.D.

SURGEON IN CHARGE OF THE PRESBYTERIAN EYE AND EAR CHARITY HOSPITAL OF BALTIMORE, MD.

At the meeting of the American Medical Association in May, 1886, at St. Louis, I brought before the ophthalmological section a statement from Dr. Charles Michel, of St. Louis, that he was treating successfully his cataract extraction cases with eyes closed by adhesive strips and in moderately lighted rooms. The section disapproved the plan and advised a continuance of the method in universal use of compress bandages and dark rooms. I informed the section that I would put the proposed method on trial and, would report to the section the next year in Chicago the results of my experiments. That report has been rendered. During the year ninety-eight cataract extractions and sixty-nine iridectomies have been performed with such a percentage of successes as warrants the statement that bandages and dark rooms are not only permanently abandoned at the hospital, but must in the very near future be given up by all ophthalmic surgeons.

During the course of this year's experiments, not only have light isinglass straps superseded the heavy compresses and bandages, but much of the restraint in universal use has been proven useless and arbitrary. Under the belief that when the two lids are made one by the adhesive strap, with the tarsal cartilages acting as splints over the corneal surface, and kept in position by means of the tonic contraction of the palpebral muscle, the eye recently operated upon was thoroughly protected from disturbances, regardless of the movements of the rest of the body, the many restraints in universal practice were one by one abandoned.

First, it was found not necessary to operate in the bed in which the patient was to remain during the after treatment. For this was substituted an operating table of convenient height and width placed near a large window from which good light could be had. This permits the operator to complete the manual to his own satisfaction. When the operation for cataract extraction is smoothly done nine-tenths of the dangers against the restoration of sight are removed.

The next step in the abandoning of restraints was not to put the patients to bed, but to allow them the use of their limbs during the entire treatment. Dr. Michel, the advocate of the light room and light dressing treatment, still adopts the restraints in common use, not allowing his patients to turn from their backs in bed for five days. When at the end of this period their backs were aching he would allow them to turn over on the side opposite to the eye operated upon. I do not put them to bed at all. After the operation I allow them to use a lounge, bed or chair, following their own preferences. They go to bed at their usual bedtime hour, sleeping on any side that is most comfortable, and they dress themselves in the morning before breakfast.

For the past four months I have taken another great step forward, and have released the eye not operated upon from being strapped. This was a bold step in defiance of the theory universally accepted that the movements of the eye when left open must affect the cornea of the other recently cut, and therefore a needful quiet must be secured. However satisfying this theory may be, and we have all adopted it for generations back, the experience at the Presbyterian Eye and Ear Hospital, of Baltimore, has conclusively shown that this restraint was never called for and had never been of any utility, but on the contrary of much annoyance and discomfort.

Thus one by one the old rules of universal adoption have been abandoned, and I may say that now the revolution in the after treatment of cataract cases has become complete.

Hereafter there will be no more bandaging, dark rooms, bed operations, bed restraints, diet lists, isolation or smoked

glasses needed. The years work at the hospital has shown that the red, suffused, watery, sensitive eyes, so constantly seen after cataract operations were made so by the restraining treatment, and were not necessary accompaniments of the convalescence. Thick bandages, dark rooms, and restraint in bed caused most of these annoyances. When cataract extractions are treated with a very thin, light colored isinglass strip over one eye as the sole dressing, leaving the other eye open, the patient allowed to enjoy in his chamber the light to which he is daily accustomed, the strap removed at the end of the fifth day, when the corneal wound is perfectly healed, very little sensitiveness or congestion or wateriug will be found. Convalescence is in this way very much expedited. At the end of the first week the patient can be allowed the privilege of the entire house, and before the two weeks are finished he will be ready for dismissal, with eyes so strong as to need but little protection from smoked glasses.

The fruits of my early experiments were given to the profession in June last, with reasons for the change in treatment. These were deemed satisfactory by many specialists who upon my recommendation determined to try the new plan for themselves. At the Chicago meeting, June 7, 1887, many were found in the section who were as enthusiastic as myself over the new after-treatment. Several had used the isinglass strap and light rooms, and expressed themselves as delighted at the beautiful results secured. At my suggestion they have promised to test equally the no bed treatment leaving one eye open for the guidance of the patient, so as really to remove all restraint. This is to be the dressing of the future and is an immense advance over the blind groping of both patient and surgeon as now conducted.

My present improved practice is to treat the wound made in the extraction of cataract if as it were an ordinary corneal wound such as we daily see resulting from accident. Close the eye with a piece of isinglass plaster and restrict the patient to his chamber for a few days.

What a change is this over the course still adhered to by

some as expressed at the Chicago meeting. First preparation of patient, then operating in the bed, the carefully and thoroughly excluding light from both eyes with compresses and head bandages, in a dark room, then restraint in bed, patients not allowed to talk to friends or to eat solid food, must stay on their back even with hands tied to prevent an accidental touching of the eyes while asleep, and this cruelty kept up for days in the name of progressive surgery. To be sure such statements only came from old practitioners who had been so long running in this deep rut that they could not get out of it, and yet up to one year since this was orthodox practice, sanctioned by every authority on cataract operations.

The work at the Presbyterian Eye and Ear Charity Hospital for the past year has broken the spell and a number of specialists who have tested successfully the new plan have renounced altogether the old method. From present appearances it would look as if the dark room and confining after treatment of cataract and iridectomy cases will soon be assigned to the shelves of a surgical museum, and all such patients will be allowed to enjoy the blessed light of day throughout their entire treatment, for their own immediate benefit and also for the comfort of the attendants.

A CASE OF SPONTANEOUS ABSORPTION OF A SENILE CATARACT, WITHOUT INJURY TO THE CAPSULE OF THE LENS—RESTORATION OF EXCELLENT VISION.

BY CHARLES J. KIPP, M.D., OF NEWARK, N, J.

It is a well known fact that soft cataracts are occasionally absorbed without the aid of the surgeon. It is also well known that a hard cataract undergoes retrogressive changes in its cortical layers after a certain period of its existence. These changes not unfrequently cause the cortex to become fluid and to be partially absorbed and the hard nucleus to sink by its own weight to the bottom of the capsular sac (Morgagnian cataract). Ordinarily the fluid cortex remains opaque, but occasionally it is changed into a transparent fluid. (See case reported by Dr. G. A. Nordmann in the *Archives of Ophthalmology*, Vol. xiv, p. 258), and under these circumstances considerable improvement of vision will result. As a rule, these retrogressive changes are accompanied by the development of dense white spots on the inner surface of the capsule. It is also generally conceded, I think, that the complete absorption of the lens, transparent or opaque, of a person over 35 years of age (the period of life at which the nucleus is said to begin to harden), sometimes results from a wound of its capsule. I myself have observed this in several aged persons. The possibility of the spontaneous complete absorption of a senile (nucleo-cortical) cataract, without injury of the capsule was, however, generally denied till Brettauer,[1] of Trieste, Austria,

[1]Bericht über die 17te Versammlung der Ophthalmologischen Gesellschaft, Heidelberg, 1885, page 47.

at the meeting of the German Ophthalmological Society at Heidelberg last year, reported three cases in which this event had occurred. To these cases, which are the only authentic cases on record, I can now add the following:

John E. Dietz a carrier, now living at No. 178 Brun street, Newark, N. J., was first seen by me on November 11, 1873. At that time he was 55 years of age, and in good health. His urine contained no sugar. He had a nucleo-cortical cataract in each eye. The cataract in the left eye was fully mature; that of the right eye nearly ripe. Failure of sight was first noticed in both eyes six or seven months before. The eyes were otherwise healthy. Perception of light and projection good in both eyes. I extracted the cataract of the left eye by v. Graefe's method on November 18, 1873. The wound healed rapidly and three weeks after the operation the sight of this eye with a $+{}^{1}/_{3.5}$ lens was ${}^{15}/_{xl}$. He was able to read Jaeger No. 1 with a $+{}^{1}/_{2.5}$ glass. Two months later I made another examination of the eyes, and found them in the condition last mentioned. After that the patient passed out of my sight, and I should probably never have seen him again if my friend and colleague, Dr. Wm. Rankin, jr., who had assisted me in the operation on the man's left eye, had not kindly called my attention to the present condition of the man's eyes. Having made application for an increase of pension on account of impairment of sight he was sent to Dr. Rankin for an examination of his eyes in November, 1885. The doctor, to his great surprise, found that although the eye bore no evidence that an operation had been made on it, the cataract had disappeared. With a cataract glass before this eye, its sight was excellent and somewhat better than that of the eye operated on by me thirteen years ago. Shortly after this I sent for the man and on inquiry learned that no one had touched his eyes since I operated on his left eye, and that the right eye had sustained no injury of any kind. He remembered to have struck his head against a lamp-post soon after the left eye was operated upon, but the injury was not sufficient to lay him up for even a day. It had, apparently, no influence

on his right. During the last few years he had noticed some improvement in the sight of the right eye, but as he had never tried the sight of this eye with the correct glass before it, was not aware that he was able to see print with it till he was examined by Dr. Rankin. On examination I found that his right eye with a $+^{1}/_{2.5}$ lens before it was $^{18}/_{xxx}$. The sight of the left eye, the one operated on by me, was $^{18}/_{ix}$. In this eye there was some thickened capsule in the centre of the pupil. With a $+^{1}/_{2.5}$ glass he could read the smallest print with both eyes. The right eye was perfectly normal anteriorly. No scar could be found in the cornea or in the sclerotic. The anterior chamber was very deep. The iris was intact but trembled very much on the slighest motion of the eye. Its color was the same as that of the other eye. The pupil was small, free and active. After dilating the pupil with atropine, the examination by oblique illumination showed that of the cataractous lens nothing but its capsule remained. This was intact, and apparently attached all around to the suspensory ligament of the lens. It was very thin and transparent[1] except in its lower portion, where a small, very white, opaque mass was adherent to its inner surface. The capsule was as tremulous as the iris. The ophthalmoscopic examination showed the refraction of the eye to be highly hypermetropic. The vitreous body was perfectly transparent; no floating opacities could be discovered. The optic disk and the retina exhibited no sign of disease. I may also mention that the tension of the eye was normal and that the field of vision was intact.

The cases observed by Brettauer are of the greatest interest and I shall therefore give an abstract of them for the benefit of those who are unable to read the original.

Case I. J. L., æt. 45, was first seen March 20, 1862. Mature cataract in right eye; half mature cataract in left eye. Flap extraction of cataract of right eye March 26, 1862. Result good. Patient was seen again in 1871. Examination of

[1]Since the above was written I have shown the case to Drs. E. G. Loring and Emil Gruening, of New York City, both of whom were unable to determine whether or not the capsule had been ruptured.

left eye revealed slightly tremulous iris and greenish discoloration of this membrane. (The iris of the other eye was light brown). Pupil round and active. In the pupil was seen a membranous mass with an irregular, star-like opacity in it. Atropine produced maximum dilatation of the pupil, and then there were seen radiating from the centre of this membrane grayish-white stripes, corresponding nearly to the sectors of the lens to which were attached a number of cholesterin crystals, like gold tinsel hanging from the branches of a Christmas-tree, which trembled on the slightest motion of the eye. The spaces between the opaque stripes now filled with a gelatinous mass into which the whole lens seemed to be transformed. A nucleus could not be seen. A careful examination showed that the posterior capsule had advanced forward up to the anterior capsule which was intact. In the anterior part of the vitreous body were several pretty large floating opacities. The retina and the optic disk could be plainly seen with the ophthalmoscope. The disk was slightly hyperæmic, and on its outer side there was a slight conus, in size about one-sixth the diameter of the disk. Prof. Becker, of Heidelberg, saw the patient for the first time in September, 1872. The opaque stripes beforementioned cleared up gradually and the cholesterin crystals decreased in number. On March 22, 1874, I noted the acuity of vision of the left eye as $^{20}/_{xl}$ with a $+ \, ^{1}/_{6}$ glass. The slightest variation in the distance between the eye and the glass diminished the acuity of vision, and there was therefore not a trace of the accommodation remaining. At the last examination (August, 1885) I found the anterior chambers very deep and the iris very tremulous. Only one broad opaque stripe remained, it was situated immediately below the capsule, and extended from above and inward to the centre. The entire capsular sac, which may be compared to the skin of a pressed-out grape berry, was more tremulous than formerly. In the greatly dilated pupil (atropine) there was seen in the lower outer quadrant a narrow, crescent-shaped space which was of a brighter red than the rest when light was thrown into the eye by the ophthalmoscope. Evidently,

the uninjured capsular sac had here become separated from the zonula of Zinn, since the examination in April, 1885, and then gave rise to the same ophthalmoscopic appearance that is seen in luxation of the lens. The patient was unable to state when he first noticed an improvement in his sight, but he denied positively that the eye had sustained a traumatic injury, and the examination failed to discover a scar or a rent either in the cornea, iris or the capsule of the lens.

Case II. G. H., æt. 50, mature nucleo-cortical cataract in right eye; not fully mature cataract in left eye. Extraction of cataract of right eye by v. Graefe's method March 16, 1867. Result: S $^{6}/_{xxiv}$ with + $3^{1}/_{2}$ glass. In 1881 patient stopped me in the street, and told me that he was beginning to see again with the left eye. An examination made at this time showed normal cornea, somewhat deep anterior chamber, slight tremulousness of iris, the anterior capsule was intact. The lens contained numerous cholesterin crystals which trembled on movement of eye without, however, changing their places. The crystals seemed to be suspended in a semi-fluid mass of jelly-like consistency. When the patient looked downward a white lenticular body of about the size of a hemp seed came into view, which was evidently the remains of the nucleus. The ophthalmoscopic examination showed paleness of optic disk and a very narrow conus on its outer side. S with $+^{1}/_{3\cdot5}$ $^{6}/_{xxxvi}$. In October, 1885, the remnant of the nucleus could no longer be found, but there was now in this case also a small free space between the lower margin of the capsule and the zonula of Zinn.

Case III. Mrs. N. M., æt. 48, at the time I extracted a nucleo-cortical cataract from the right eye, October 15, 1871. Result of operation, with a $+^{1}/_{3\cdot5}$, S $^{6}/_{ix}$: There was also a ripe cataract in the left eye at this time. In 1884 she began to see again with the left eye, and an examination of the eye showed normal cornea, anterior chamber and iris. The pupil which atropine dilated *ad maximum* was almost entirely black, excepting innumerable white points which were recognized at once as crystals of cholestearin and were scattered throughout

the lens; they were suspended in a transparent gelatinous mass and trembled, without, however, changing their places on movements of the eye. If the patient looked downward, a white, spindle-shaped body, apparently about 3 mm. long and 1.5 mm. thick, was seen behind the iris in this closed capsular sac. When the patient suddenly looked upward, this body flew up to the middle of the pupil. It was evidently the remainder of a nearly absorbed nucleus. The vitreous body was clear and the fundus oculi normal. In the latter part of August, 1885, the nucleus had entirely disappeared. With a $+^{1}/_{3.5}$ glass the vision of this eye was $^{6}/_{IX}$. The three cases here reported were shown to and examined by Prof. O. Becker and Dr. Goldzicher, of Pesth, in April, 1885.

These cases and my own show conclusively that the total absorption of a hard cataract is possible. The circumstances favoring the absorption remain, however, to be investigated.

RUPTURE OF THE OPTIC NERVE AT THE CHIASM.

BY M. H. POST, M. D., ST. LOUIS, MO.

July 27, 1886, Frank A., colored, about 23 years of age while dodging about a carriage in play with another colored boy struck his eye violently against the fender of one of the wheels.

Dr. Paul Y. Tupper was called and after doing what was immediately necessary sent the case to me.

When I first saw him there was considerable pain; the hæmorrhage had almost stopped; the eye was hanging by a large amount of tissue just outside the palpebral opening.

Upon examining more closely I found that the fender had struck the lower lid just above the orbital ridge of the superior maxillary bone, the force of the blow not only dislocating the globe but also rupturing both lids at the inner angle vertically, the wound of the lower lid being the more extensive.

A 5% solution of cocaine muriate was at once dropped upon the conjunctiva and other exposed tissues. Under its influence, without paining the patient, I was able to snip away the muscles and conjunctiva till the eye was held only by the optic nerve.

Preparatory to cutting the nerve I seized the globe with a pair of fixation forceps and used gentle traction. My surprise may be imagined when the eye came out bringing with it a little more than two inches of the optic nerve, it having been ruptured at or near the chiasm.

The wounds of the lids were stitched up, the patient sent home and put to bed; a mercurial purgative administered, iced applications made and the case watched carefully for cerebral complications, but none arose and a perfect recovery was made.

HYPOPYON KERATITIS TREATED BY FREQUENT IRRIGATIONS WITH SUBLIMATE.[1]

BY F. C. HOTZ, M. D., CHICAGO, ILL.

Since it is an undoubted fact that progressive suppuration is caused by infection and kept up by the action of micro-organisms, the quicker these are destroyed, the quicker we shall arrest the destructive suppuration. For this reason galvanocautery has become such a favorite with ophthalmic surgeons; and certainly it has achieved better results than any other mode of treatment of these cases. But it requires an expert to apply it; it looks frightful to the patient and may easily impress upon him the idea—should the case do badly—that the burning has done it; and lastly, the cautery destroying a certain amount of corneal tissue adds to the loss of substance and to the size of the resulting scar; besides it has no direct effect upon the micro-organisms which may have passed through the cornea into the outer chamber.

I therefore tried to answer the question whether we cannot accomplish the desired effect (prompt destruction of the infectious germs) by a simpler, less heroic treatment than cauterization; and the clinical experiments made during last winter seem to show that the following treatment is very efficient:

The eye affected with suppurative ulcer of the cornea is thoroughly washed with a solution of corrosive sublimate (1:5,000); then both eyes are covered with compresses wrung out of the sublimate; every half hour or hour (according to the extent of the suppuration) the bandage is removed and the eye irrigated

[1]Abstract of a paper read before the Section on Ophthalmology at the meeting of the American Medical Association at Chicago.

with the solution. In doing so the patient throws his head well back, the upper lid is raised and held by the finger and sufficient solution is dropped into the eye to immerse the cornea; this position must be kept at least one minute; then compresses and bandage are reapplied.

In twenty-four hours there are always signs of improvement. The frequency of the irrigations is then reduced to once in two hours, and so on, until the ulcer is healed.

Rapid healing, smooth, translucent scars, small loss of tissue were noticed; in no case perforation occurred after this treatment was begun, although in several cases the destruction had reached Descemet's membrane, when the patient came under treatment.

This treatment can be carried out by anyone who is once showen the proper way of irrigating the eye.

TRANSLATION.

IMPAIRMENT OF VISION AFTER THE APPLICATION OF GALVANO-CAUTERY TO THE NASAL CAVITY.

BY DR. ZIEM OF DANZIG.

Hirschberg's Centralblatt fuer prakt. Augenhlkde.

The following is part of an article on the above subject:

CASE I.—During the summer of 1879 I destroyed a hypertrophic portion of the nasal mucous membrane at the posterior end of both lower conchæ under guidance of the rhinoscopic mirror by means of galvano-cautery in a patient 41 years of age, who suffered besides from vaso-motor troubles and especially from palpitation of the heart which was not due to any organic lesion. Very soon after a new swelling appeared at the posterior end of the right middle concha which was cauterized also. When I saw the patient a few days later, he complained of impaired vision in the right eye. With a +4.5 sph. V. R.=$^{20}/_{xl}$, L. E. with +4.0 almost $^{20}/_{xx}$. The right optic papilla showed well pronounced venous pulsation; on the left nothing of the kind could be recognized. The right field of vision was found somewhat contracted when compared with that of the left eye.

CASE II.—July, 1879, I was consulted by a lady 25 years of age on account of an erectile tumor at the left inner canthus, which took up the aréa of the two lachrymal canaliculi, had a nodular surface, was somewhat pigmented and showed several fine hairs. This abnormal condition is said to have existed since her birth, but to have grown more after her last confine-

ment. The tears run freely from the eye, and the lids are glued together in the morning. The mucous membrane of the nose on that side is swollen considerably. The removal of the diseased portion of the skin by the knife had been recommended to her by somebody else. Being satisfied that, in order to perfectly remove this congenital angioma which by the pressure during labor had considerably increased, it would be necessary to re-establish normal breathing through the nose as well as a normal circulation in the whole region of the diseased portion, I first cauterized the swollen nasal mucous membrane extensively with the galvano-cauter. During this procedure the patient grew very pale and almost fainted, and at the same time the tumor at the inner canthus collapsed considerably. During the following days the tumor was repeatedly punctured with a very fine galvano-cautery, and thus the tumor removed in such a perfect manner that she was hardly recognized at the clinic where she had first applied for help, and where I had sent her now to get a pair of protective spectacles. This was occasioned by the fact that soon after the operations she had noticed an impairment of vision in her left eye. Ophthalmoscopic examination had revealed a considerable venous hyperæmia of the optic papilla. I know nothing further of the case.

Case III.—In October, 1883, a lady, 24 years of age, came under my care on account of blepharadenitis, and a sensation of pressure in the eyes. She had also, as is so often the case in such patients, a considerable swelling of the nasal mucous membrane at the anterior end of the lower conchæ. I cauterized these; the left one in the common way avoiding a hæmorrhage; on the right side, however, I purposely removed the galvano-cauter, or rather tore it off, only after it had become firmly adherent. In this way, of course, a hæmorrhage ensued which was the more considerable, since the patient had a general disposition to bleed. After the operation, the left eye showed an increased tension to the examining finger, when compared with the right which felt immediately very much relieved. With the ophthalmoscope a strong venous pulsation was visible on the left optic papilla, while the right

one was normal. I am sorry I did not at once examine the visual acuity and the range of accommodation of the left eye. When I examined her a fortnight after the operation, I found things in the same condition as before it (R. E. V.=$^{4}/_{IV}$, L. E. with —1.0 cyl. A. cor. V. almost $^{4}/_{IV}$); the venous pulsation on the left optic papilla was then no longer present.

The cases here reported teach us that it is not necessary to use the galvanocautery very energetically on the nasal mucous membrane in order to produce an altered circulation within the eyeball, and even an impairment of vision, at least where there exists a disease of or an alteration in the circulation, and more especially where there is a disposition to vaso-motor disturbances. Opinions may differ whether our second case may fairly be counted here. It might be claimed that the impairment of vision which came on after the operation was rather the consequence of the destruction of the erectile tumor at the inner canthus than of the cauterization of the nasal mucous membrane. This might be possible, but supposing that the destruction of the angioma alone or in the main caused the impairment of vision and the venous hyperæmia of the optic disk, we would have to assume a similar mode of development for it as in the remaining cases. In case I. we found after the cauterization of the posterior end of the lower concha a swelling at the posterior end of the middle one, and after the cauterization of this a hyperæmia and venous pulsation on the optic papilla. In the third case the hyperæmia and venous pulsation on the papilla developed only on that side on which the nasal mucous membrane had been cauterized in the common manner without causing a hæmorrhage. This case, however, was not examined in such a perfect manner as to give a satisfactory explanation of the way in which the hyperæmia on the papilla came about. Yet, since the venous pulsation on the papilla did no longer exist a fortnight after the operation, we may be justified in assuming that it was not there before the operation, and therefore a direct consequence of the latter. We have, however, made no exact examination of the range of accommodation and of the visual

field immediately before and after the cauterization, nor after some time had elapsed. I do not think I will ever be able to clear up these points in a similar case, since I have gradually come to the conviction that the galvano-cauterization of a swollen nasal mucous membrane is not only in a vast majority of the cases superfluous, at least if we take care of the causes and remove them, but even that this operation may produce a number of disastrous results. In some other papers I have related other cases to show that cauterization of the nasal mucous membrane by means of the platinum burner causes a more or less pronounced congestion in the neighboring areas of circulation, as in the skin of the cheek, the mucous membrane of the middle ear, the maxillary cavity, the frontal sinus, even in the meninges, and I have there stated it as my opinion that in the cases here related, the impairment of vision was due to a hyperæmia in the erectile organ of the eyeball, the ciliary body. In support of this opinion let me cite the following case: A mariner, 53 years of age, who had lost the right eye with formation of a ciliary staphyloma in consequence of a contusion, consulted me and I found the blind eye neither painful spontaneously nor on pressure. In March, 1879, for reasons that need not here be detailed, I cauterized the considerably swollen mucous membrane of his right nasal cavity. Next day the patient complained of spontaneous pain in the staphylomatous eye and on pressure, which, however, soon disappeared again. There can be hardly a doubt but that the cauterization of the nasal mucous membrane in this case caused a congestion towards the ciliary body. I think this was the same in our third case, in which an increase of intraocular tension which was observed right after the operation could only be explained by such a hyperæmia of the ciliary body. On account of the many anastomoses between the bloodvessels of the nasal cavity on the one and the orbit and eyeball on the other hand and in which the *ethmoidales* play the chief role, there can be, anatomically speaking, no obstacle to this assumption. The fact that in the two cases here reported the congestion especially concerned the ciliary body is

simply explained since there was already a *locus minoris resistentiæ.* The blood which by means of the galvano-cautery is suddenly driven from the region operated upon must escape toward a region in which, as a result of existing disease, the resistence of the tissue and especially of the bloodvessels is weakened; thus, in the mariner an injury to the ciliary region had preceded, and in the lady a feeling of tension in the eyeball which evidently resulted from a chronic hyperæmia of the ciliary body was the reason for her consulting me.

Thus, also, in Case I a considerable degree of hypermetropia existed which caused no slight strain of the accommodative apparatus. I do not know whether the quantity of blood contained in the bloodvessels of the ciliary body in highly hypermetropic and highly myopic eyes has ever been satisfactorily inquired into, but I think we might *a priori* expect, that the ciliary body in a hypermetropic eye, since it is continually at work and strained, would in a general way contain more blood than in an eye with a reverse condition of refraction. If in the second case we had confined our operation either to the nasal mucous membrane alone, or to the angioma alone, we might certainly have expected a considerable congestion towards the other untouched organ as being the nearest and most vascular. The double cauterization, however, could not but drive the blood to the elastic tissue of the ciliary plexus. I think in all of these cases we have to lay especial stress upon this elasticity and erectility of the ciliary plexus. The ciliary body of the eye, like the cavernous tissue of the nasal mucous membrane, of the genital organs, the choroidal plexus in the ventricles of the brain, the comb of the rooster, etc., etc., is erectile tissue; this has been successfully proven ten years ago by A. Weber.

In the normal condition such an acute congestion of the ciliary body is easily and speedily adjusted. Things lie differently, however, where there is already an abnormally large quantity of blood; if in such a case the quantity of blood is suddenly increased, it will cause an overstretching and consequent relaxation of the walls of the erectile tissue, and thus

an important factor for the removal of the blood, the contractility of the bloodvessels is eliminated. An increase in the blood-pressure of the ciliary body will make itself felt in the vitreous body, and the increased pressure in the vitreous body may, in the manner which Donders has fully explained, cause venous pulsation on the optic papilla.

The observations here reported and others have caused me to dispense almost altogether with the galvano-cautery of the nasal mucous membrane. Although I have in different eye affections, when there was at the same time a swelling of the nasal mucous membrane had a series of happy, even brilliant successes by "galvanocaustic bleeding" of the nasal mucous membrane, that is by tearing off forcibly the burner when tightly stuck to the tissues, the same results may be obtained in a much simpler way by the application of leeches to the nasal mucous membrane and by scarifications. These methods have long been recommended by Hyrtl and Peter Frank in the treatment of severe eye affections, and they are equally successful.

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There are fifty-four papers promised, an excess of material which the section in six days work cannot dispose of so that no more than one-half of these papers can be used. It is seen from the list of officers, all of whom will be present and will contribute papers, that the section promises a rich treat to all who propose to attend, and that the fullest success is promised. All the sections are fully up to the standard of the Ophthalmological Section. The number of the leading medical men of Europe who have accepted positions in the Congress and who have expressed their intention of being present in Washington will make of this Congress by far the most brilliant assemblage of medical men that has ever been gathered together. The success of the Congress is more than assured now for the meeting in Washington in September.

Some of the Subjects of Papers to be Read by the Authors.

EUROPEAN.

Prof. L. DeWecker - - - Paris, France
Effusions in the Sheath of the Optic Nerve.

Prof. J. Hirschberg - - - Berlin, Germany
Measuring and Operative Correction of Squint.

Prof. Galezowski - - - - Paris, France
The Operation of Cataract and the After Treatment.

H. Power, Esq., F.R.C.S. - - London, England
Microbes in the Development of Eye Diseases.

Dr. Ole Bull - - - Christiania, Sweden
Pathological Changes in Retinal Vessels.

Dr. A. Mooren - - - Düsseldorf, Germany
Eye Troubles in their Relation to Occipital Disease.

Dr. L. Landolt - - - - Paris, France
Operations for Strabismus.

W. A. Brailey, Esq. - - - London, England
Remarks on the Operative Treatment of Glaucoma.

Dr. Moura - - - - Rio Janeiro, Brazil
Glaucoma in the Negro Race.

Dr. A. Gayet - - - - Lyons, France
Ocular Asepsis.

P. H. Mules, Esq. - - - Manchester, England
Evisceration and the Artificial Vitreous.

Dr. J. Samelsohn - - - Cologne, Germany
Detachment of the Retina, Its Pathology and Treatment.

J. Richardson Cross, Esq. - - Bristol, England
Retinoscopy.

Dr. A. Mooren - - - Düsseldorf, Germany
The Most Simple Method of Cataract Operation.

The remaining papers, forty in number, are from leading eye surgeons of the United States.

REVIEWS.

A Theoretical and Practical Treatise on Astigmatism. By Swan M. Burnett. St. Louis: J. H. Chambers & Co. 1887. With fifty-nine diagrams and illustrations. Price $3.50.

Dr. Burnett's book is one which we are sure is bound to have a wide circulation on account of its perspicuity aud completeness. Such a treatise has indeed been wanting, and we are sure it will be well received by the profession, as it deals thoroughly with astigmatism from all standpoints. The numerous, partly original, illustrations are of such a nature as to enhance the value of the book considerably. It has, furthermore, a very complete list of the literature on the subject and statistics of 806 astigmatic eyes.

Dr. Burnett's name and work is well and favorably known to our colleagues. We trust it needs only a few words as an announcement of the book. That it will prove of great interest and value to the teacher as well as the scholar we have no doubt.

The Normal and Pathological Histology of the Human Eye and Eyelids. By C. Fred. Pollok. With 230 original drawings by the author. London: J. and A. Churchill. 1886.

The author gives in a very short and often, it seems, decidedly insufficient way the histological conditions of the different membranes of the eyeball and the eyelids in health and disease, and a short chapter on the development of the eye. This description forms, so to speak, the text explaining the plates which take up the larger portion of the volume. We have not been able to detect anything new or original in this work which appears to be largely a repetition of what has

been published elsewhere. The plates, partially in black and white, partially tinted, contain a number of well drawn illustrations; a number of them are decidedly poor and of little value (see for instance illustrations on plate xxxv). A large number which are merely repetitions might have been left out, as being of no additional interest, and thus the high price of the book ($6) might have been reduced. The reason of existence for this book, since the one given by the author that the literature on this subject, "which is chiefly foreign, is beyond the reach of many" can hardly be considered correct, can only be, *sit venia verbo*, a local one. This seems to be proven by the fact that nothing new is contained in this book and that, as far as we can see, not even an attempt is made to help to fill up the gaps in our present knowledge. In fact, many of the more recent and valuable additions to our knowledge are in no way made use of, as for instance O. Becker's valuable contributions to the formation of cataract, etc.

A Practical Treatise on Diseases of the Eye. By Edouard Meyer, of Paris. Translated from the third edition by Freeland Fergus. Philadelphia: Blakiston, Son & Co. 1887.

This well-known treatise greets us now for the first time in the English language, although its eminent qualities had years ago already led to its translation into five or six other living languages. Its popularity can hardly be less in this new dress than it has been in the older ones, as translator and publishers have evidently done all in their power to do the book justice. Further recommendations would be needless.

Ueber Neuritis optica; besonders die sogenannte Stauungspapille, und deren Zusammenhang mit Gehirn-affectionen. (On neuritis optica, especially the so-called choked-disc, and its connection with brain affections). By R. Deutschmann, Jena: Gustav Fischer. 1887.

The author. whose name is well known and whose merits, especially in experimental pathology of the eye are un-

doubted, in this pamphlet tries to answer finally the mooted question, whether there is really a choked disc, due to the increase of intracranial pressure, or whether what is called choked disc is simply a lower form of optic neuritis. He adduces numerous clinical and pathological observations and a series of rational and successfully performed experiments on animals to prove that an increase of the intracranial (intervaginal) pressure alone is not sufficient to produce a choked disc, since it never reaches that degree of pressure which would be necessary or is at least so to produce that condition by experiment. In this his results are directly opposite to those of Manz and Schulten. The positive results which he came to were obtained by the injection of septic material into the cranial cavity. The choked disc following these injections was always found to be due to the presence of pathogenic germs which, with the cerebro-spinal fluid, had been thrown into the intervaginal space of the optic nerve, had reached its end at the eyeball and being retained there had caused the development of inflammatory symptoms.

It is impossible here to follow the highly interesting deductions more closely. The gist of the pamphlet lies in the following words: "The 'choked disc' is an inflammatory affection. It is not to be considered as the result of a stasis as the Schmidt-Manz theory will have it. On the contrary it is produced by the action of pathogenic agents, whether these are of a chemical or a parasitical nature." We must confess that the deductions have all but won us over to Deutschmann's views. Certainly we can highly recommend the study of this little pamphlet to our readers.

REFRACTION OF THE EYE, ITS DIAGNOSIS AND THE CORRECTION OF ITS ERRORS. By A. Stanford Morton. Third edition. Philadelphia: P. Blakiston, Son & Co. 1886.

The fact that this little book has in its five years of existence already reached its third edition shows that it is appreciated in a high measure among those for whom it is intended. We

are sure this third edition will prove as useful to the student and the general practitioner as did the former ones.

A Treatise on Diphtheria, Historically and Practically Considered; Including Croup, Tracheotomy and Intubation. By A. Sanné. Translated, annotated and the surgical anatomy added; illustrated with a full-page colored lithograph and many wood engravings. By Henry Z. Gill. St. Louis: J. H. Chambers & Co. 1887. 665 pages. Price: Cloth, $5; Sheep, $6.

We highly recommend this exhaustive volume on a subject of such vital importance to the medical profession. It deals with diphtheria in all its forms, with its history, prophylaxis and treatment in such a manner that it cannot fail to be appreciated by our professional brethren. We think the able translator as well as the publishers are deserving of great success for not having spared any effort to bring this valuable volume creditably before the American public. A.